1.1.1 Incident Category

Emergency Response; CERCLA incident category; Active Production Facility; Unified Command established

1.1.2 Site Description

1.1.2.1 Site Location

The TPC Group (TPC) Port Neches Operations site is located at 2102 TX-136 Spur, Port Neches, Jefferson County, TX 77561 (29.978056, -93.939167). The 218-acre site is an active facility producing products derived from petrochemical raw materials from C4 hydrocarbons, including 1, 3-butadiene (butadiene), raffinate, and butene. Butadiene is used in the production of synthetic rubber used for tires and automobile hoses. Combined production capacity for this facility is more than 900 million pounds per year. Logistics infrastructure capabilities include pipeline, barge, rail and tank car. The Site contains multiple storage tanks and related processing equipment. Treated waste water is discharged from the on-site joint waste water treatment plant (JWWTP) direct to the Neches River.

The site borders the Neches River to the north, which flows to Sabine Lake to the east. Residential properties reside to the northwest, west, southwest, and northeast of the site. The Port Neches Middle School and High School are located directly west of the facility, approximately 0.25 mile. Population estimate for Port Neches is 12,831 (US Census, population estimates, July 1, 2018, (V2018)).

1.1.2.2. Description of Threat

On 27 November 2019, at approximately 01:00, an explosion was reported at the TPC Group Port Neches facility due to unknown causes, and 1,3-butadiene was reported to have been released. The explosion resulted in injuries to two TPC group employees and one contractor at the site. Personnel were transported to the Southeast Texas Regional Medical Center and to Memorial Herman in Houston, TX for treatment.

1.1.3 Removal Preliminary Assessment/Removal Site Inspection Results

Due to the instability of the Site, which included active fires, the likelihood of additional explosions, and the limited ability to conduct a detailed status assessment of the tanks, towers, and contents in each after the incident began, on-site preliminary assessment efforts were minimal.

2. Current Activities

2.1 Operations Section

Following the initial explosion, local responders from the Sabine Neches Chiefs Association (SNCA) responded along with TPC Group and multiple other first responder agencies to assess and secure the incident. TPC notified the National Response Center (NRC) at approximately 04:39 hours.

The day of the incident Unified Command established the following air monitoring action levels. The action levels were all based upon recording a sustained reading of 5 minutes. If any representative under Unified Command recorded an exceedance above the action level then a strike team would be sent to location in order to confirm the reading.

- Volatile Organic Compounds (VOCs) at 5 parts per million (ppm)
- 1,3-butadiene at 0.5 ppm
- Particulate Matter (PM 2.5) at 138 ug/m3

Following further discussion among Unified Command on 04 December 2019, an additional action level was developed for 1,3-butadiene that could be utilized for the Jefferson County Judge to recommend citizens to shelter-in-place or evacuate, if the reading was sustained for 10 minutes.

- 1,3-butadiene at 1.5 ppm

2.1.1 Narrative

The actions discussed below have been previously discussed under the initial POLREP that covered the actions conducted since the incident began at 01:00 hours on 27 November 2019 to 06:00 hours on 28 November 2019.

27 November 2019 01:00 – 28 November 2019 06:00

At approximately 01:00, an explosion was reported at the TPC Group Port Neches Operations, and caused a fire to start in Block 5 of the processing unit. TPC reported that following the explosion there was an active release of 1,3-butadiene, a colorless, noncorrosive, highly flammable gas. The butadiene provided a source of fuel and allowed the fire to grow in intensity. An evacuation radius of 0.5 mile was established shortly after the initial explosion, and a shelter in place was issued for the City of Groves. It was reported that the shockwave from the explosion had blown out windows in properties a few miles away from the facility. During the time period that the incident began, schools within Port Neches-Groves Independent School District (ISD) were closed due to Thanksgiving break.

TPC Group activated its Emergency Response Plan, and requested assistance from Port Neches Fire Department, the Huntsman Corporation, and SNCA. Local, state, and federal authorities were also notified of the incident shortly after it occurred. TPC notified the NRC at approximately 04:39 hours. At approximately 02:00, an Emergency Operations Center (EOC) was established at the Huntsman Administrative Building at 2701 TX-136, Port Neches, TX. During the fire-fighting process on 27 November, foam was utilized from approximately 6 totes. It was later determined that the amount of foam utilized totaled 1,320 gallons and the Safety Data Sheets for the foam used indicated that the foam contained per- and polyfluorakyl substances (PFAS) compounds.

A Region 6 EPA On-Scene Coordinator (OSC) was activated to respond to the incident, and at approximately 02:45 activated the EPA Superfund Technical Assessment Response Team (START). START arrived onsite at approximately 05:30 to begin handheld air monitoring in the vicinity of the incident site, and within the downwind community. At approximately 08:00 the EPA's Airborne Spectral Photometric Environmental Collection Technology (ASPECT) arrived onsite to conduct airborne real-time chemical and radiological detection, as well as, infrared and photographic imagery of the incident and downwind community. At 10:00 hours the EPA OSC arrived at the incident and assumed the role of Federal OSC upon integration into the established Unified Command among other federal (USCG), local (Jefferson County Emergency Management, Port Neches Fire Department, SNCA), state (TCEQ, GLO), and TPC partners. Beginning on 27 November 2019 through 28 November 2019 at 06:00, EPA conducted handheld air monitoring at 85 locations in the communities surrounding the TPC Group facility. The air monitoring results were reported below the detection limit at all locations for total VOCs and for 1,3-butadiene. ASPECT conducted three flights on 27 November 2019, and did not detect the presence of any chemicals on flights #1 – 3.

The Texas Commission on Environmental Quality (TCEQ) deployed personnel and contractors to the incident site and began handheld air monitoring within the communities downwind of the incident in conjunction with EPA response efforts at approximately 06:00 hours.

On behalf of TPC, Center for Toxicology and Environmental Health LLC (CTEH) conducted perimeter air monitoring of the incident site. From the beginning of the incident on 27 November 2019 to 28 November 2019 (06:00 hours), CTEH air monitoring teams collected approximately 451 readings of 1,3-butadiene, of which 442 readings were taken in the community and 9 readings were taken in the work area. CTEH air monitoring teams detected 1,3-butadiene at 11 locations in the community. The average detection and highest concentration in the community was 0.160 ppm and 0.210 ppm, respectively. CTEH air monitoring teams detected 1,3-butadiene at 3 locations in the work area. The average detection and highest concentration in the work area was 0.913 ppm and 1.260 ppm, respectively. There were no detections in the community above the UC action levels, as the single detection above the UC action level for 1,3-butadiene (1.260 ppm) was detected in the work area. CTEH began to collect ambient air sampling within the 4-mile radius evacuation and surrounding areas on 27 November 2019. Unified Command established that any reading above the action level would result in personnel from EPA, TCEQ, CTEH to be dispatched as to follow up and conduct additional air monitoring at locations where the action level had been exceeded for the five minute sustained period.

The morning of 27 November, USCG established a Water Safety Zone from Neches River Light 20 (Fina Lower Anchorage) to Neches River Light 29 (Phillips 66). USCG allowed barge traffic to move along the river, following an inspection one at a time. At approximately 10:00 hours TPC communicated that a no-fly zone (NFZ) had been established 3 miles wide and 3,000 feet high surrounding the incident site, and any flight requests in the area would have to be communicated through Jack Brooks Regional Airport.

Two towers, 2D-8 and S-45 had been determined to have fallen due to fire damage on the morning of 27 November. At approximately 13:48, a second explosion occurred at the incident site. After the second explosion, the Jefferson County Judge's Office expanded the mandatory evacuation zone to a 4-mile radius. The original EOC fell inside the evacuation zone and was moved from the Huntsman Administrative Building at 2701 TX-136, Port Neches, TX to ISTC Building 3749 US-69 Beaumont, TX at 17:00 hours, before UC decided to select another location. The EOC was re-established at the Holiday Inn – Beaumont in the Galveston Room at approximately 17:51 hours. Onsite response efforts and downwind community air monitoring continued overnight. Following the evacuation order, the Red Cross of Southeast Texas established an evacuation shelter at Ford Park at approximately 19:00.

2.1.2 Response Actions to Date (28 November 2019 06:00 – 05 December 2019 06:00)

28 November 2019 06:00 to 29 November 2019 06:00

Unified Command
Response operations have operated continuously since the incident began on 27 November at 01:00 hours. Unified Command determined to institute a 06:00 to 06:00 operational period beginning on 28 November 2019.

As of 06:30, the website, www.portnechesresponse.com, was public and served a resource for the public to find information regarding the response to the incident.

Fire Response
During firefighting efforts on 28 November, operations applied approximately 36,000 gallons per minute (GPM) (approximately 50 million gallon/day) of water to the ongoing fires in Block 5. Three fire trucks and water cannons at 7 remote fire monitoring stations were utilized for fire suppression.

TPC deployed personnel to connect generators that would return power to the joint wastewater treatment plant (JWWTP), and transport firefighting runoff water from onsite storage ponds to the JWWTP. Due to lack of onsite electrical power, the JWWTP reached capacity. As a result, water was discharged from Outfall 201, into a canal that eventually flows into the Neches River, 3 miles downstream. At approximately 11:00, TPC observed sheen downstream of Outfall 201 with the assistance of unmanned aerial drones. TPC activated Clean Harbors and Resolute Environmental and Response Services to respond to the hydrocarbon release, and to place absorbent boom in strategic locations. At approximately 19:40, TPC restored electrical power to the JWWTP, and began to pump water from surrounding storage and treatment ponds to the JWWTP at 5,000 GPM.

NOAA's plume model forecasted that the main trajectory of the smoke plume to move westward across the Jack Brooks Regional Airport, Nederland, and Port Neches through the morning of 28 November 2019. By late morning, winds were projected to increase and trend more from the southeast and south. The main plume trajectory shifted to a northwest direction in the afternoon and towards the Central Gardens area, Lamar University, and possibly the west end of Beaumont.

Air Monitoring

Handheld air monitoring was conducted from 28 November 2019 (06:00 hours) to 29 November 2019 (06:00 hours) at approximately 111 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene. CTEH air monitoring teams detected 1,3-butadiene at 3 locations in the work area. The average detection and highest concentration in the work area was 0.913 ppm and 1.260 ppm, respectively.

ASPECT attempted one flight (flight #4) on the morning 28 November 2019, but no data was collected due to unfavorable weather conditions.

From November 28, 2019 (06:00 hours) to November 29, 2019 (06:00 hours), CTEH air monitoring teams collected approximately 1087 readings of 1,3-butadiene, of which 1,041 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 2 locations in the community. The average detection and highest concentration in the community was 0.210 ppm and 0.270 ppm, respectively. There were no exceedances of the 1,3-butadiene action level in the community. CTEH air monitoring teams detected 1,3-butadiene at 13 locations in the work area. The average detection and highest concentration in the work area was 0.359 ppm and 1.510 ppm, respectively.

TCEQ teams, 4 personnel in the day and 4 at night, also conducted air monitoring during the response.

Water Sampling

CTEH performed water sampling on behalf of TPC in the downstream spill path in canals and the Neches, southeast of the incident, and collected three samples in total. EPA did not conduct water sampling.

Unified Command gave permission for fluorine free foam use if necessary, for vapor suppression in emergency situations. As of the morning of 28 November 2019, TPC reported no new foam had been utilized for vapor suppression. TPC staged the 6 totes of foam that had previously been utilized for vapor suppression.

Recovery Operations

29 November 2019 06:00 to 30 November 2019 06:00
As of 10:00 hours the Jefferson County Judge lifted the evacuation order enacted on 27 November for areas within the 4-mile radius surrounding the TPC facility, with the exception of designated safety zones in the immediate area of the event. The designated safety zones were defined as:

- No access to Spur 136, north of FM 366
- No access on north end of Magnolia Avenue (FM 366) at Park Street
- No southbound access on FM 366 and Hogaboom Road
- No access at Grigsby Avenue and Spur 136
- Main Street is accessible up to Avenue K and Avenue L and Park

Unified Command cautioned residents that plan to return home to remain aware of the plume location. Due to elevated particulate matter associated with smoke released from the incident, sensitive groups were cautioned that direct exposure to particulates could result in respiratory irritation.

At approximately 11:30 Unified Command received updates from air monitoring teams that due to changing weather conditions particulate matter was concentrated low to the ground and had exceeded the 5-minute action level of 138 ug/m3. As a result, the Jefferson County Judge released a statement regarding the elevated particulate matter in the air, and urged people to stay inside, as well as to avoid touching any debris in their yard. Any debris could have contained asbestos containing material (ACM).

Fire Response

On the 29 November there were nine actively fueled fires that burned. The operations team worked to isolate ongoing fires in Block 5 and Block 10. The estimated rate of water use for fire suppression was approximately 19,000 GPM. Water utilized for fire suppression was directed to the JWWTP at 5,000 GPM. The facility developed a block isolation plan to address the fires, which was successful in slowing down some of the fires. To prevent releases of fuel or vapors, the facility was not extinguishing fires where gas was actively leaking. The facility staged additional foam staged for vapor suppression and firefighting, however the plan was to not utilize the foam unless necessary. Unified Command authorized the use of foam if necessary for safety reasons.

Air Monitoring

Handheld air monitoring was conducted from 29 November 2019 (06:00 hours) to 01 December 2019 (06:00 hours) at approximately 134 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the detection limit at all locations for total VOCs and for 1,3-butadiene. 7 locations were reported above the screening level of 138 µg/m3 for particulates.

ASPECT attempted a flight (flight #5) on the morning of 29 November 2019, but could not collect any data due to a low ceiling.

From 29 November 2019 (06:00 hours) to 30 November 2019 (06:00 hours), CTEH air monitoring teams collected approximately 1,241 readings of 1,3-butadiene, of which 1,205 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 25 locations in the community. The average detection and highest concentration in the community was 0.221 ppm and 1.00 ppm, respectively. There was a single detection north of the site (1.00 ppm) that exceeded the UC action level for 1,3-butadiene at 17:35 in the community. CTEH air monitoring

teams detected 1,3-butadiene at 10 locations in the work area. The average detection and highest concentration in the work area was 1.055 ppm and 1.620, respectively.

TCEQ teams also conducted air monitoring during the response.

Water Sampling

CTEH performed water sampling on behalf of TPC in the downstream spill path in canals and the Neches, southeast of the incident. EPA did not conduct water sampling.

Waste Recovery
TPC stated that Resolute had placed boom at 201 Outfall, Orchard Avenue, Pine Street., Lift Station, Sarah Jane Road, Huntsman 004 Outfall, and Neches Rivers.

30 November 2019 06:00 to 01 December 2019 06:00
Unified Command

TPC released information that residents and property owners impacted by the event should call 1-866-601-5880 to file insurance claims.

TPC has released a table of the tanks that incurred damage following the incident and has circulated it with the rest of Unified Command. In total 16 tanks were assessed to be damaged, 3 of which sustained severe damage and released contents. TPC also determined the content level of the 16 damaged tanks prior to the incident, and stated the other 86 tanks in the facility were not harmed. TPC is currently assessing the 16 damaged tanks to determine the current levels of product utilizing drones with infrared capabilities.

Tank Numbers	Block Location	Content	Tank Condition	Content level at time of incident (Barrels)
40	Block 5	Raff	Impacted	3214
106	Block 10	OOS	Impacted	-
73	Block 10	NMP	Compromised	0
72	Block 10	NMP	Compromised	823
38	Block 5	Polyblend	Impacted	910
36	Block 5	HB Raff	Impacted	4897
35	Block 5	HB Raff	Impacted	5122
91	Block 5	BD	Impacted	719
34	Block 5	HB Raff	Compromised	327
33	Block 5	HB Raff	Impacted	388
90	Block 5	BD	Impacted	5276
25	Block 9	Crude C4	Impacted	3396
30	Block 9	Rich Solvent	Impacted	1265
31	Block 9	OOS	Impacted	-
69	Block 9	OOS	Impacted	-
59	Block 4	OOS	Impacted	-

Notes:
OOS - Out of service
BD - 1,3-butadiene
HB Raff - High butane raffinate
NMP - N-methylpyrrolidone

Fire Response
At approximately 02:00, all fires in Block 5 were extinguished. Three actively fed fires were still burning in the Block 10 area. Estimated rate of water used for fire suppression was approximately 31,000 GPM (7,000 GPM recycled water, 24,000 freshwater). The JWWTP continued pumping firefighting runoff water from storage ponds to the JWWTP at a pumping rate of approximately 6,900 GPM.

Firefighting runoff water overtopped the tank containment berm. The runoff water discharged to the 201 Canal, which leads to a permitted containment discharge area. The facility's Oil Spill Response Organization (OSRO) placed absorbent boom every 50-60 feet within the canal.

At approximately 23:20, South 45-B tower, which had been leaning since the initial explosion, collapsed near the actively burning area, and landed on a pipe lack. Response personnel stated a natural gas odor was present in the area, and evacuated to the muster station. An accountability check was performed at the muster station prior to relocating further away from the incident site.

Air Monitoring
Handheld air monitoring was conducted from 30 November 2019 (06:00 hours) to 01 December 2019 (06:00 hours) at approximately 82 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs, and for 1,3-butadiene.

ASPECT completed two flights on 30 November 2019; one in the morning (flight #6) and one in the afternoon (flight #7). Analysis of imagery showed light grey plume of smoke being generated at the facility. Analysis of Infrared (IR) imagery collected at the facility indicated that thermal conditions at the site continue to show a decrease in intensity. IR imagery also indicated no sheen signature at the confluence of the waterway and the Neches River. There were no chemical detections during either flight.

From 30 November 2019 (06:00 hours) to 01 December 2019 (06:00 hours), CTEH air monitoring teams collected approximately 1,694 readings of 1,3-butadiene, of which 1,540 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 12 locations in the community. The average detection and highest concentration in the community was 0.300 ppm and 1.00 ppm, respectively. There were 3 detections north of the site (between 0.63 – 1.00 ppm) that exceeded the UC action level for 1,3-butadiene in the community. CTEH air monitoring teams detected 1,3-butadiene at 1 location in the work area. The average detection and highest concentration in the work area was 1.690 ppm.

TCEQ teams also conducted air monitoring from 30 November 2019 (06:00 hours) to 01 December 2019 (06:00 hours).

Water Sampling
CTEH performed water sampling on behalf of TPC in the downstream spill path in canals and the Neches, southeast of the incident.

The EPA Team began conducting surface water sampling on 30 November 2019 at 4 sample locations in canals downstream (southeast) of the incident and in the Neches River.

The sample locations were:

- TPC-01
  - Outfall 201 Canal - Orchard Ave Bridge
- TPC-02
  - Star Lake Canal - Port Neches Road Bridge
- TPC-04
  - Confluence of Star Lake Canal and Neches River
- TPC-05
  - Neches River at Port Neches Park, upstream background

The EPA samples were submitted for analysis of VOCs, semi-volatile organic compounds (SVOCs), oil and grease (O&G), glycols, total organic carbon (TOC), and total petroleum hydrocarbons (TPH). The EPA samples were delivered to Eurofins-Test America (Houston, Texas).

EPA received the preliminary lab reports for the samples collected 30 November and 1 December 2019, analyzed by Eurofins-Test America.

The results from the sampling event will be compared to the TCEQ Surface Water Quality Standards (WQS) or to TCEQ Texas Risk Reduction Program surface water protective concentration levels (PCLs), if a WQS was not available for a chemical.

Waste Recovery
As of 30 November 2019 approximately 26,000 gallons of liquid has been recovered by TPC to date. The 18'' hard boom and 8,350' of sorbent boom remain in place along the Outfall 201 Canal and Star Lake Canal.

Wildlife Response Actions
On 30 November 2019, Wildlife Response Services (WRS) personnel were activated to assist in a wildlife planning role for the incident. To date, no live, oiled wildlife had been observed.

01 December 2019 06:00 to 02 December 2019 06:00

Fire Response
As of 15:00 hours, 2 pressure fires continued to burn, and TPC continued to provide suppression to the incident. Estimated rate of water used for fire suppression was approximately 14,000 GPM (7,000 GPM recycled water, 7,000 freshwater). The JWWTP continued pumping firefighting runoff water from storage ponds to the JWWTP at a pumping rate of approximately 7,000 GPM.

Air Monitoring
Handheld air monitoring was conducted from 01 December 2019 to 02 December 2019 at approximately 146 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

ASPECT completed two flights on 01 December 2019; one in the morning (flight #8) and one in the afternoon (flight #9). IR imagery collected indicated isolated elevated thermal locations still exist in the facility. Analysis of imagery confirmed reports of light gray smoke was emitted and moving east of the facility, and 4 water cannons were being employed at the facility. Analysis of IR imagery collected at the confluence of the waterway and the Neches River showed no sheen signature. Analysis of FTIR data showed detections of isobutylene near the Orchard Avenue

bridge in the morning and to south of the facility near the wastewater treatment plant in the afternoon. These detections were approximately 1.0 ppm and 1.7 ppm between the flights conducted in the morning and in the afternoon.

From 01 December 2019 (06:00 hours) to 02 December 2019 (06:00 hours), CTEH air monitoring teams collected approximately 2,031 readings of 1,3-butadiene, of which 1,733 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 4 locations in the community. The average detection and highest concentration in the community was 0.095 ppm and 0.110 ppm, respectively. There were no exceedances of the UC action level for 1,3-butadiene in the community. CTEH air monitoring teams detected 1,3-butadiene at 33 locations in the work area. The average detection and highest concentration in the work area was 0.555 ppm and 1.800 ppm, respectively.

TCEQ teams also conducted air monitoring from 01 December 2019 to 02 December 2019.

Water Sampling
CTEH performed water sampling on behalf of TPC in the downstream spill path in canals and the Neches, southeast of the incident.

EPA conducted surface water sampling on 1 December 2019 at 4 locations downstream (southeast) of the incident, and in the Neches River.
The sample locations were:

- TPC-01
  - Outfall 201 Canal - Orchard Ave Bridge
- TPC-02
  - Star Lake Canal - Port Neches Road Bridge
- TPC-04
  - Confluence of Star Lake Canal and Neches River
- TPC-05
  - Neches River at Port Neches Park, upstream background

EPA received the preliminary lab reports for the samples collected 30 November and 1 December 2019, analyzed by Eurofins-Test America in Houston, TX.

The results from the sampling event will be compared to the TCEQ WQS or to TCEQ Texas Risk Reduction Program surface water PCLs, if a WQS was not available for a chemical.

Asbestos Community Assessment
Beginning on 01 December 2019, CTEH initiated observational assessments and collection of potential facility-related debris in the adjacent community near the TPC facility. These observational assessments, debris collection, and sampling events were driven by concerns over bulk debris potentially containing asbestos, which may have been dislodged or mechanically disturbed during the South 4 Group Fire and subsequently transported to off-site locations. The property assessments were conducted at various locations, including residential, commercial, and public areas, within the community surrounding the TPC facility.

Following the field collection of potential facility-related debris, samples were sent to an American Industrial Hygiene Association-accredited laboratory for analysis. Bulk samples were analyzed for the asbestos content and fibers using the EPA 600/R-93/116 Method involving polarized light microscopy. In addition to bulk sample analysis, CTEH collected wipe samples to verify the presence/absence of asbestos fibers on both indoor and/or outdoor surfaces associated with residences that reported potential terminal debris on their property. Wipe samples were analyzed for the presence of asbestos fibers via American Society for Testing and Materials Method 6480.

On 01 December 2019, CTEH collected 6 bulk samples from locations in Orange, TX. Asbestos (chrysotile) was detected in all 6 samples from 5 – 7 %. CTEH also collected 3 property assessment wipe samples (2 in Orange, TX, 1 in Port Neches, TX). No asbestos was detected in the 3 wipe samples.

Waste Recovery
As of 01 December 2019, approximately 44,000 gallons of liquid had been recovered by TPC to date, which included 18,000 gallons recovered today.

A Rapid Assessment Team was stood up today to assess recovery needed in each division.

- Division A: Outfall 001 to Orchard Avenue
- Division B: Orchard Avenue to the weir dam in the canal
- Division C: Weir dam in the canal to Atlantic Road.
- Division D: Atlantic Road bridge the confluence of the Neches River, including the outfall west of the powerline right-of-way.
- Division E: Huntsman 004 outfall canal from Star Lake Canal to Port Neches Atlantic Road

Wildlife Recovery
WRS mobilized to the EOC. WRS initiated planning for wildlife operations and conducted a survey of the area.

02 December 2019 06:00 to 03 December 2019 06:00
Unified Command
At approximately 10:30 hours U.S. Congressman Randy Weber of District 14 visited the EOC.

A SCAT team was stood up with representation from state (TCEQ), federal (USCG), and TPC contractors.

Fire Response
As of 06:00 hours, 2 pressure fires continued to burn. TPC continued to provide approximately 9,000 GPM of water to the Block 10 area in order to cool surrounding tanks and also for vapor suppression. Approximately 3,000 GPM of water utilized was recycled, and the remaining 6,000 GPM was treated in the JWWTP. As of 08:00 hours, 1 pressure fire remained. At approximately 08:50 hours, there was a flash fire and it was thought that an additional tower fell. Operations reviewed drone footage and determined no additional towers fell.

Air Monitoring
Handheld air monitoring was conducted from 02 December 2019 to 03 December 2019 at 130 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

ASPECT completed two flights on 02 December 2019; one in the morning (flight #10) and one in the afternoon (flight #11). IR imagery collected showed no elevated temperature sources other than local solar heating of metal surfaces. Analysis of imagery showed no indication of an active fire or emissions. Aerial imagery showed one water cannon in operation and light gray smoke being emitted from the facility due to the one fire. Analysis of IR imagery collected at the confluence of the waterway and the Neches River showed no sheen signature. Analysis of FTIR data showed detections of isobutylene south of the facility near the wastewater treatment plant. These detections were approximately 1.57 ppm on two separate passes conducted in the afternoon. There were no chemical detections during the morning flight.

From 02 December 2019 (06:00 hours) to 03 December 2019 (06:00 hours), CTEH air monitoring teams collected approximately 1,778 readings of 1,3-butadiene, of which 1,488 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 16 locations in the community. The average detection and highest concentration in the community was 0.149 ppm and 0.450 ppm, respectively. There were no exceedances of the UC action level for 1,3-butadiene in the community. CTEH air monitoring teams detected 1,3-butadiene at 33 locations in the work area. The average detection and highest concentration in the work area was 0.720 ppm and 5.1 ppm, respectively.

TCEQ teams also conducted air monitoring from 02 December 2019 to 03 December 2019.

Water Sampling
CTEH performed water sampling on behalf of TPC in the downstream spill path in canals and the Neches, southeast of the incident.

EPA did not conduct water sampling on 2 December 2019, but resumed sampling on 3 December 2019, adding two additional sample locations (TPC-06 (Outfall 201 Canal) and TPC-07 (Huntsman Outfall 004)). EPA continued to have samples analyzed for VOCs SVOCs, O&G, glycols, TOC, and TPH. EPA also submitted samples for analysis for three specific PFAS compounds: Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid.

Waste Recovery
As of 02 December 2019, approximately 53,375 gallons of liquid had been recovered by TPC to date, which included 9,375 gallons recovered today.

Asbestos Community Assessment
On 02 December 2019, CTEH collected 18 total bulk samples, from 16 properties located in Port Neches, TX and 2 locations at the Huntsman Water Treatment Facility. Asbestos (chrysotile) was detected in 14 of the property samples at 4 – 23 %. Asbestos was not detected in the bulk samples collected from the Huntsman Water Treatment Facility. CTEH also collected 13 property assessment wipe samples from affected properties (1 in Port Arthur, TX, 12 in Port Neches, TX). No asbestos was detected in the 13 wipe samples.

Wildlife Response Actions
The Wildlife Hotline Number was established in the morning. A WRS employee maintained the hotline, documenting all calls. WRS also investigated facilities for a suitable wildlife rehabilitation center, if necessary. Once the facility is determined, the address will be published in the wildlife management plan.

Overall summary of carcasses observed impacted – not collected:

- 2,000 shad (1'' – 3'') (approximately) – observed by TCEQ
- 30 bass, catfish, and red drum (approximately) – observed by TCEQ
- 24 blue crabs – observed by TCEQ
- 1 alligator – observed by operations
- 2 blue teal ducks – observed by TCEQ

03 December 2019 06:00 to 04 December 2019 06:00

Fire Response
As of approximately 06:00, 1 pressure fire continued to burn. TPC continued to provide approximately 14,000 GPM of water to the Block 10 area in order to cool surrounding tanks and vapor suppression. Approximately 6,000 GPM of water utilized was recycled, and the remaining 8,000 GPM was being treated in the JWWTP.

As of approximately 19:00, the final pressure fire naturally extinguished.

Air Monitoring
From 03 December (06:00 hours) to 04 December 2019 (06:00 hours), EPA air monitoring teams collected readings at 91 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported below the screening level at all locations for particulates, total VOCs and for 1,3-butadiene.

ASPECT completed two flights on 03 December 2019, one in the morning (flight #12) and one in the afternoon (flight #13). IR imagery collected showed no elevated temperature sources other than local solar heating of metal surfaces. Analysis of imagery showed no indication of an active fire or emissions. Analysis of IR imagery collected at the confluence of the waterway and the Naches River showed no sheen signature. Data collected on the afternoon flight did show the presence of 1,3-butadiene and aromatics 1300 meters west of the facility. Detected levels were approximately 0.93 ppm for 1,3-butadiene and less than 1 ppm for aromatics. There were no chemical detections during the morning flight.

From 03 December 2019 (06:00 hours) to 04 December 2019 (06:00 hours), CTEH air monitoring teams collected approximately 1,841 readings of 1,3-butadiene, of which 1,530 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 60 locations in the community. The average detection and highest concentration in the community was 0.252 ppm and 1.350 ppm, respectively. There were 3 detections that exceeded the UC action level for 1,3-butadiene in the community. CTEH air monitoring teams detected 1,3-butadiene at 21 locations in the work area. The average detection and highest concentration in the work area was 2.600 ppm and 13.60 ppm, respectively.

TCEQ teams also conducted air monitoring during the course of 03 December 2019 (06:00 hours) to 04 December 2019 (06:00 hours).

Water Sampling

EPA conducted surface water sampling on 03 December 2019 at 6 sample locations downstream (southeast) of the incident and in the Neches River.
The sample locations were:

- TPC-01
  - Outfall 201 Canal – Orchard Avenue Bridge
- TPC-02
  - Port Neches Road Bridge and Star Lake Canal
- TPC-04
  - Confluence of the Star Lake Canal and the Neches River
- TPC-05
  - Port Neches Park, upstream background
- TPC-06
  - Outfall 201 Canal – The Weir
- TPC-07

- Huntsman Outfall 004

The EPA samples were submitted for analysis for PFAS [specifically Perfluorohexanesulfonic acid, Perfluorooctane Sulfonate, and Perfluorooctanoic acid], VOCs, SVOCs, O&G, glycols, TOC, and TPH. The EPA samples were delivered to three laboratories: Eurofins-Test America (Houston, Texas), ALS (Houston, Texas), and ALS (Holland, Michigan). Samples analyzed under PFAS method 537 were delivered to ALS, Houston and samples analyzed under PFAS method 8327 were delivered to ALS, Holland.

EPA received the preliminary lab reports for the samples collected 30 November and 01 December 2019, analyzed by Eurofins-Test America.

Waste Recovery
As of 03 December 2019, approximately 61,500 gallons of liquid have been recovered by TPC to date, which included 8,125 gallons recovered today.

Shoreline Cleanup Assessment Technique (SCAT) Team of state, federal, and TPC personnel began to assess shoreline of canals downstream from the incident. Operations have completed an initial flushing through Division A, and the reduction in observable oil was noticeable. The remaining oil on water had become more weathered and emulsified. SCAT Teams plan to continue point observations in remaining un-surveyed shoreline in Division B, then continuing to Division C and E.

Asbestos Community Assessment
On 03 December 2019, CTEH collected 1 bulk sample from a location in Port Neches, TX. Asbestos (chrysotile) was detected in the samples at 2%. CTEH also collected 39 property assessment wipe samples (27 in Orange, TX, 5 in Port Arthur, TX, 7 in Port Neches, TX). No asbestos was detected in the 39 wipe samples.

Wildlife Response Actions
WRS and Texas Parks and Wildlife Department (TPWD) continued surveying the canals downstream of the incident for impacted wildlife.

Overall Summary of Wildlife Collected at Incident Site

- 28 White Bass (collected by TPWD)
- 7 Yellow Bass (collected by TPWD)
- 3 Bluegill (collected by TPWD)
- 1 Spotted Sunfish (collected by TPWD)
- 2 Red Ear Sunfish (collected by TPWD)
- 1 Alligator Gar (collected by TPWD)
- 1 Blue Catfish (collected by TPWD)
- 8 Striped Mullet (collected by TPWD)
- 3 Green Sunfish (collected by TPWD)

04 December 2019 06:00 to 05 December 2019 06:00

Unified Command
Following further discussion among Unified Command on the morning of 04 December 2019, an additional action level was developed for 1,3-butadiene that could be utilized for the Jefferson County Judge to recommend for shelter-in-place, if a reading of 1,3-butadiene was a sustained 10 minute reading at 1.5 ppm.

Unified Command began to receive reports from air monitoring personnel of detections of 1,3 butadiene that exceeded the action level of 0.5 ppm south of the facility in the neighborhoods that are south of Magnolia/366 and bounded between Earle Street and Merriman Street. Port Neches Chief Paul Nelson issued a shelter-in-place for the City of Port Neches, based on air monitoring results and consistent northerly wind patterns. The shelter-in-place will remain in effect until the following morning of 5 December 2019 at 06:00 hours. Unified Command continued to monitor air in the community.

Due to the shelter in place, Port Neches-Groves ISD cancelled school for the remainder of the week, in order to give adequate time for the shelter in place to expire and for air quality to best retested prior to faculty and student returning to school.

At approximately 22:00, the Jefferson County Judge issued a voluntary evacuation order for the City of Port Neches, based on current conditions and out of an abundance of caution.

Fire Response
As of 04 December 2019, the fire remained extinguished. Operations continued to utilize up to 8,000 GPM to the incident area for vapor suppression and cooling tanks, and processed the water through the JWWTP. A valve on Tank 25 leaked vapors throughout the day, and combined with winds out of the north, sent a plume to the communities south of Hwy 366.

Air Monitoring
From 04 December (06:00 hours) to 05 December 2019 (06:00 hours), EPA air monitoring teams collected readings at 112 locations in the communities surrounding the incident site by the EPA Team. The air monitoring results were reported above the screening level at two locations for 1,3-butadiene (based upon applying the correction factor to the VOC reading) and one location for VOCs.

ASPECT completed two flights on 04 December 2019, one in the morning (flight #14) and one in the afternoon (flight #15). Analysis of IR imagery collected showed no elevated temperature sources other than local solar heating of metal surfaces. Analysis of imagery showed no indication of an active fire or emissions. Aerial imagery showed one cannon being employed to spray a spherical tank south of the production unit. Analysis of IR imagery collected at the confluence of the waterway and the Naches River showed no sheen signature. There were no chemical detections during either flight.

From 04 December 2019 (06:00 hours) to 05 December 2019 (06:00 hours), CTEH air monitoring teams collected approximately 1,841 readings of 1,3-butadiene, of which 2,068 readings were taken in the community. CTEH air monitoring teams detected 1,3-butadiene at 351 locations in the community. The average detection and highest concentration in the community was 1.292 ppm and 12.090 ppm, respectively. There were 210 detections that exceeded the UC action level for 1,3-butadiene in the community. CTEH air monitoring teams detected 1,3-butadiene at 201 locations in the work area. The average detection and highest concentration in the work area was 2.709 ppm and 17.070 ppm, respectively.

TCEQ teams also conducted air monitoring from 04 December (06:00 hours) to 05 December 2019 (06:00 hours).

Water Sampling
EPA created analytical summary tables for the samples that were collected on 30 November and 01 December 2019. On 30 November 2019, the surface water sample collected at TPC-01

exceeded the PCL for methyl tert-butyl ether (MTBE), and the surface water sample collected at TPC-02 exceeded the PCL for benzene and for MTBE.

On 1 December 2019, the surface water sample collected at TPC-01 and TPC-02 exceeded the PCL for MTBE. No PCLs were exceeded upon analyzing TPC-04 (confluence sample) and TPC-05 (background).

EPA did not conduct water sampling on 04 December 2019, but will resume sampling on 05 December 2019.

Waste Recovery
As of 04 December 2019, 76,500 gallons of liquid had been recovered by TPC to date, which included 15,000 gallons recovered today.

Wildlife Response Actions
As of 04 December 2019, one dead fish was reported in Division C.

Asbestos Community Assessment
On 04 December 2019, CTEH collected 20 bulk samples (3 in Bridge City, TX, 7 in Port Arthur, TX and 10 in Port Neches, TX). Asbestos (chrysotile) was detected in 14 of the samples at 4 – 55%. CTEH also collected 15 property assessment wipe samples (4 in Bridge City, TX, 1 inn Port Arthur, TX, and 10 in Port Neches, TX). No asbestos was detected in the 15 wipe samples.

Acronyms – in order of appearance

TPC Group – TPC

JWWT – joint waste water treatment plant

Sabine-Neches Chief Association – SNCA

National Response Center - NRC

VOC – volatile organic compound

Particulate Matter – PM 2.5

On-Scene Coordinator - OSC

Airborne Spectral Photometric Environmental Collection Technology - ASPECT

Superfund Technical Assessment Response Team START

Center for Toxicology and Environmental Health LLC - CTEH

Semi-volatile organic compounds - SVOCs

Oil and grease - O&G

Total organic carbon - TOC

Total petroleum hydrocarbons TPH

per- and polyfluorakyl substances - PFAS

methyl tert-butyl ether - MTBE

Wildlife Response Services - WRS